



UNITED STATES PATENT AND TRADEMARK OFFICE

Can

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,679	10/28/2003	Richard Louis Goin	2003-0168.02 (58521.US/46)	3920
21972 7590 01/19/2007 LEXMARK INTERNATIONAL, INC. INTELLECTUAL PROPERTY LAW DEPARTMENT 740 WEST NEW CIRCLE ROAD BLDG. 082-1 LEXINGTON, KY 40550-0999			EXAMINER STEPHENS, JUANITA DIONNE	
			ART UNIT 2853	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		01/19/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/694,679

Applicant(s)

GOJIN ET AL.

Examiner

Juanita D. Stephens

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2006.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 17 and 19-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 17 and 19-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claims 10-16, and 18 cancelled.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, 7-9, 17, 19, and 22-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Courian et al. (US 6,286,941 B1).

Courian et al. discloses an ink jet printhead (Fig. 7) for an ink jet printer, comprising: **1)** a substrate (60) containing ink ejection devices, **2)** a thick film layer (barrier layer 62) attached to the substrate and **3)** a nozzle plate (48) attached to the thick film layer, the nozzle plate containing a plurality of ink ejection nozzles (84) corresponding to the ink ejection devices, and the printhead containing flow features (grooves 64, chamber 74, plenum 78 and pinch point 80) having a height dimension and a width dimension formed therein for flow of ink from an ink feed slot through ink flow channels (fluid channel comprised of plenum 78 and pinch points 80) in the thick film layer to the plurality of ink ejection devices (col 7, lns 6-10, Figs. 7 and 12) for ejection through the nozzles, wherein at least a portion of the flow feature dimension for at least one of the ejection devices is formed in both the thick film layer and laser ablated in the nozzle plate (col 7, ln 62), and wherein the thick film layer contained at least 12% of the flow feature dimensions (as shown in Fig. 7), **4)** wherein the printhead comprises

substantially all of the flow features formed in both the nozzle plate and thick film layer (as shown in Fig. 7), **5**) wherein the nozzle plate has a thickness ranging from about 25 to about 70 microns (col 7, Ins 17-18) (2 mil converts to 50.80 micron (μ or μ)), **6**) wherein the flow features have a height dimension ranging from about 5 to about 30 microns (col 8, Ins 47-50) (25 micrometre (μ m) converts to 25.00 micron (μ or μ)), **7**) wherein about 20 to about 80% of the flow features height dimension is formed in the nozzle plate (as shown in Fig. 7), **8**) wherein the flow features laser ablated in the nozzle plate have at least two different height dimensions (as shown in Fig. 7), and **9**) wherein the thick film layer have first portions of ink flow features including an ink chamber (74) and an ink flow channels (fluid channel comprised of plenum78 and pinch points 80) (col 7, Ins 6-10) in flow communication with the ink chamber formed therein for flow of ink from an ink feed slot through the flow channel to the ink chamber (col 7, Ins 6-10), and the nozzle plate have second portions of ink flow features (grooves 64) formed therein by laser ablation (col 7, In 62), and wherein the first portion are at least 12% of a total of the first and second portions (as shown in Fig. 7).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 5 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Courian et al. (US 6,286,941 B1) in view of Murthy et al. (US 6,024,440).

Courian et al. discloses the claimed invention, with the exception of 1) wherein the ink ejection nozzles have a bore length ranging from about 20 to about 65 microns (recited in claims 5 and 20). Murthy et al. at least teaches wherein the ink ejection nozzles have a bore length ranging from about 20 to about 65 microns (col 5, lns 40-41). It would have been obvious at the time the invention was made to a person having ordinary skill in the ink jet art to modify Courian et al. with the bore length as taught to be old by Murthy et al. for the purpose of increasing print quality.

5. Claims 6 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Courian et al. (US 6,286,941 B1).

Courian et al. at teaches the claimed invention, with the exception of wherein the thick film layer has a thickness ranging from about 5 to about 15 microns (recited in claims 6 and 21). Courian et al. at least teaches a thick film layer (62) is approximately 0.75 to 1 mil thick (.75 mil converts to 19.05 micron (μ or μm)) (col 7, lns 15-18). It would have been obvious to one having ordinary skill in the ink jet art at the time the invention was made to provide Courian et al. with the specified thick film thickness ranging from about 5 to about 15 micron, since it has been held that where the general condition of a claim are disclosed in the prior art, and discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Response to Arguments

6. Applicant's arguments filed 10/10/2006 have been fully considered but they are not persuasive.

The Applicant argues that the '941 patent teaches away from or avoids the use of channels in the barrier layer. The Examiner position is that the '941 patent clearly teaches that in operation, ink flows from the ink reservoir through groove, and into fluid channel comprised of plenum, past pinch point, as shown by arrows 86. The Applicant refer to column 9, lines 21-24 which states "avoiding the use of channels in barrier layer between the ink reservoir and the plenum. However, this recitation is directed to Figure 10, which is a different Embodiment. With respect to Applicant's arguments that the '941 patent does not suggest the range of thickness 5 to 15 micron, this is not persuasive. The Examiner's position is that the claim recites thickness from about 5 to about 15 microns, the term "about" is flexible (MPEP 2173.05(b)).

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

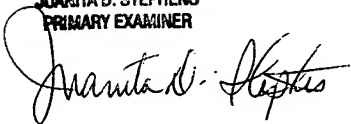
Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juanita D. Stephens whose telephone number is (571) 272-2153. The examiner can normally be reached on Flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JUANITA D. STEPHENS
PRIMARY EXAMINER



Juanita D. Stephens
Primary Examiner
Art Unit 2853

JDS
January 5, 2007